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RURAL ECONOMY, INTERNAL IMPROVEMENTS, PRICES CURRENT.

" O fortunatos nimium sua si bona norint
" Agricolas." . . . VIRG.

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AGRICULTURE.

Mr. Madison's Address.

AN ADDRESS DELIVERED BEFORE THE AGRICULTURAL SOCIETY OF ALBEMARLE, [VIRG.] ON TUESDAY, MAY 12, 1819. By Mr. *Madison President of the Society.*

IT having pleased the Society to name me for their presiding member, I feel it a duty, on my first appearing among you, to repeat my acknowledgments, for that honorary distinction; with the assurances of my sincere desire to promote the success of an establishment, which has in view so valuable an object as that of improving the agriculture of our country.

The faculty of cultivating the earth, and of rearing animals, by which food is increased beyond the spontaneous supplies of nature, belongs to man alone. No other terrestrial being has received a higher gift than an instinct, like that of the Beaver or the Ant, which merely hoards, for future use, the food spontaneously furnished by nature.

As this peculiar faculty gives to man a preeminence over irrational animals; so, it is the use made of it by some, and the neglect of it by other communities, that distingush them from each other, in the most important features of the human character.

The contrast between the enlightened and refined nations on some parts of the earth, and the rude and wretched tribes on others, has its foundation in this distinction. Civilization is never seen without agriculture, nor has agriculture ever prevailed, where the civilized arts did not make their appearance.

But, closely as agriculture and civilization are allied, they do not keep pace with each other. There is probably a much higher state of agriculture in China and Japan, than in many other countries far more advanced in the improvements of civilized life. It is surely no small reproach to the latter, that with so great a superiority in science, and in the fuller possession of the auxiliary arts, they should suffer themselves to be outstripped in the very art by which both are essentially distinguished from the brute creation.

It must not be inferred, however, from the capacities and the motives of man, for an artificial increase of the productions of the earth, that the transition from the hunter, or even the herdsman state, to the agricultural is a matter of course. The first steps in this transition, are attended with difficulty; and what is more with disinclination.

Without a knowledge of the metals, and the implements made of them, the process of opening and stirring the soil, is not an easy operation; though one perhaps not requiring more effort and contrivance, than preduced the instruments used by savages in war and in the chase.

And that there is a disinclination in human nature to exchange the savage for the civilized life, cannot be questioned. We need not look for proofs beyond our own neighbourhood. The Indian Tribes have ever shown an aversion to the change. Neither the persuasive examples of plenty and comfort derived from the culture of the earth by their white brethren, nor the lessons and specimens of tillage placed in the midst of them, and seconded by actual sufferings from a deficient and precarious subsistence, have diverted them from their strong propensities and habitual pursuits. In the same spirit, they always betray an anxious disposition to return to their pristine life, after being weaned from it by time, and apparently moulded by intellectual and moral instruction, into the habits and tastes of an agricultural people. A still more conclusive evidence of the bias of human nature, is seen in the familiar fact, that our own people nursed and reared in these habits and tastes, easily slide into those of the savage, and are rarely reclaimed to civilized society with their own consent.

Had the Europeans, on their arrival, found this continent destitute of human inhabitants, whose dangerous neighbourhood kept them in a compact and agricultural state, and had their communication with the countries they left, been discontinued, they might have spread themselves into the forests where game and fruits, would have abounded; and gradually forgetting the arts no longer necessary to their immediate wants, have degenerated into savage tribes.

An admired historian,* in his inquiry into the origin of the American Savages, represents any such degeneracy as impossible. He lays it down as a certain principle, that the necessary arts of life, when once introduced among a people, can never be lost, that the dominion over inferior animals once enjoyed, will never be abandoned; and that America consequently, must have been peopled from a country as uncivilized as itself. Yet he derives the American Savages, generally, from the Tartars, whose example must have taught them the use of certain animals, for which a substitute might have been found in the Bison or Buffaloe at least (the same animal with the cow) if not in the Elk, the Moose, or the Caraboo. And he regards the Esquimaux, a tribe distinguished in several respects, for their rude condition, as descendants from the Greenlanders, of the same modes of life with themselves, who were a colony from Norway, planted in the 9th century; an epoch prior to which the Norwegians had made such progress in the arts, as to be capable of formidable maritime expeditions.—The Greenland Colony therefore, must have undergone a degeneracy from the condition of its parent country. Without supposing the possibility of a transition from a better state of human society, to a savage state, how would the learned historian have accounted for the introduction of the savage state at all?

* Dr. Robertson.

The bent of human nature may be traced on the chart of our own country. The manufacturer readily exchanges the loom for the plough, in opposition often, to his own interest, as well as to that of his country. The cultivator, in situations presenting an option, prefers to the labours of the field, the more easy employment of rearing a herd. And as the game of the forest is approached, the hunting life displays the force of its attractions. Where do we behold a march in the opposite direction; the hunter becoming the herdsman; the latter a follower of the plough; and the last repairing to the manufactory or the workshop?

Such indeed is the facination of that personal independence which belongs to the uncivilized state, and such the distelish and contempt of the monotonous labour of tillage, compared with the exciting occupations of the chase, or with the indolence enjoyed by those who subsist chiefly on the mere bounties of nature, or on their migratory flocks, that a voluntary relinquishment of these latter modes of life, is little to be expected. We certainly perceive nothing in the character of our savage neighbours, from which it could be inferred, that even the germs of agriculture observed in their spots of maize, and a few other cultivated plants, would ever be developed into the extent implied by an agricultural life. To that little resource combined with the game furnished by the forests and by the lake or the stream, their population and habits are adjusted. There may be said, in fact, to be a plenum of the former; because it is commensurate with their food—and this cannot be increased without a change of habits, which being founded in natural propensities, do not change of themselves.

The first introduction of agriculture among a savage people appears, accordingly, never to have taken place without some extraordinary interposition. Where it has not been obtruded by colonies transplanted from agricultural countries, as from Phœnicia and Egypt into Greece, and from Greece herself, amongst her savage neighbours, the revolution has proceeded from some individual whose singular endowments, and supernatural pretensions, had given him an ascendency for the purpose. All these great reformers, in ancient times, were regarded as more than men, and ultimately worshiped as gods. A very remarkable example of modern date is found in the revolution from the savage to the agricultural state, said to have been brought about by Manco Capac, among the Peruvians, to whom he represented himself as the offspring of the sun.

Agriculture once effectually commenced, may proceed, of itself, under impulses of its own creation. The mouths fed by it increasing, and the supplies of nature decreasing, necessity becomes a spur to industry, which finds another spur, in the advantages incident to the acquisition of property in the civilized state. And thus a progres-

sive agriculture, and a progressive population ensue.

But although no determinate limit presents itself to the increase of food, and to a population commensurate with it, other than the limited productiveness of the earth itself, we can scarcely be warranted in supposing that all the productive powers of its surface can be made subservient to the use of man, in exclusion of all the plants and animals not entering into his stock of subsistence: that all the elements and combinations of elements in the earth, the atmosphere and the water, which now support such various and such numerous descriptions of created beings, animate and inanimate, could be withdrawn from that general destination, and appropriated to the exclusive support and increase of the human part of the creation; so that the whole habitable earth should be as full of people, as the spots most crowded now are or might be made, and as destitute as those spots, of the plants and animals not used by man.

The supposition cannot well be reconciled with that symmetry in the face of nature, which derives new beauty from every insight that can be gained into it. It is forbidden also, by the principles and laws which operate in various departments of her economy, falling within the scope of common observation, as well as within that of philosophic researches.

The earth contains not less than thirty or forty thousand kinds of plants; not less than six or seven hundred of birds; not less than three or four hundred of quadrupeds; to say nothing of the thousand species of fishes. Of reptiles and insects, there are more than can be numbered. To all these must be added, the swarms and varieties of animalcules and minute vegetables not visible to the natural eye, but whose existence is probably connected with that of visible animals and plants.

On comparing this vast profusion and multiplicity of beings with the few grains and grasses, the few herbs and roots, and the few fowls and quadrupeds, which make up the short list adapted to the wants of man; it is difficult to believe that it lies with him, so to re-model the work of nature, as it would be remodelled, by a destruction, not only of individuals, but of entire species, and not only of a few species, but of every species, with the very few exceptions which he might spare for his own accommodation.

Such a multiplication of the human race, at the expense of the rest of the organized creation, implies that the food of all plants is composed of elements equally and indiscriminately nourishing all, and which consequently may be wholly appropriated to the one or few plants best fitted for human use.

Whether the food or constituent matter of vegetables, be furnished from the earth, the air or water; and whether directly, or by either, through the medium of the others, no sufficient ground appears for the inference that the food for all is the same.

Different plants require different soils; some flourishing in sandy, some in clayey; some in moist, some in dry soils; some in warm, some in cold situations. Many grow only in water—and a few subsist in the atmosphere. The forms, the textures and the qualities of plants are still more diversified. That things so various and dissimilar in their organizations, their constitutions and their characters, should be wholly nourished by, and consist of precisely the same elements, requires more proof than has yet been offered.

A case which has been relied on to prove that different foods are not necessary for different plants, is that of grafting or inoculating one kind of plant on another kind; the sap obtained by the stock for itself, being found to feed and perfect the graft. But this operation has its limits. It does not extend beyond plants having a certain affinity The Apple Tree may be planted on the Pear or the Quince. It will not succeed on the Peach or the Cherry. If the cases prove that the same food suffices for the Apple and the Pear, they equally prove that different foods are required for the Apple and the Peach. It is said even, that the fruit from the Peach graft on the Almond, is not precisely the same with that from a Peach graft on a Plum.

It may be offered as another argument to the same effect, that all animal and vegetable decompositions answer indiscriminately as manures. The fact is not precisely so Certain manures succeed best with certain plants. It is true, nevertheless, that animal and vegetable substances in a decomposed state, are generally manures for plants. Fish, even an animal from the water, is successfully used as a manure for Indian Corn and other crops. But this and similar examples prove only, that some ingredients are the same in all animals and plants, not that all the ingredients in each are the same.

The chemist, though as yet a fellow student as much as a preceptor of the agriculturist, justly claims attention to the result of his processes. From that source we learn that the number of known elements, not yet decomposable, is between forty and fifty; that about seven or eight belong to the organs of plants, that different elements enter into the composition of the same plant; and that they are combined in different numbers and in different proportions, in different plants. Supposing then, as must be supposed, that these different elements, in their actual quantities and proportions, are adapted to the quantities and the proportions of the existing varieties of plants; it would happen in so great a change as that in question, with respect to the number and variety of plants, that the quantities and the proportions of the elements, would not be adapted to the particular kinds and numbers of plants retained by man for his own use. Like the types of the Alphabet, apportioned to the words composing a particular book, when applied to another book materially different in its contents, there would be, of some a deficiency, of others, a useless surplus.

Were it less difficult to admit that all the sources of productiveness could be exclusively appropriated to the food of man, is it certain that an obstacle to his indefinite multiplication would not be encountered in one of the relations between the atmosphere and organized beings?

Animals, including man, and plants may be regarded as the most important part of the terrestrial creation. They are pre-eminent in their attributes; and all nature teems with their varieties and their multitudes, visible and invisible. —To all of them, the atmosphere is the breath of life. Deprived of it, they all equally perish. But it answers this purpose by virtue of its appropriate constitution and character.—What are these?

The atmosphere is not a simple but a compound body.—In its least compound state, it is understood to contain, besides what is called vital air, others noxious in themselves, yet without a portion of which, the vital air becomes noxious. But the atmosphere in its natural state, and in its ordinary communication with the organized world, comprises various ingredients or modifications of ingredients derived from the use made of it, by the existing variety of animals and plants. The exhalations and perspirations, the effluvia and transpirations of these are continually charging the atmosphere with a heterogenious variety and immense quantity of matter which together must contribute to the character which fits it for its destined purpose, of supporting the life and health of organized beings. Is it unreasonable to suppose, that if, instead of the actual composition and character of the animal and vegetable creation, to which the atmosphere is now accommodated, such a composition and character of that creation were substituted, as would result from a reduction of the whole to man and a few kinds of animals and plants; is the supposition unreasonable, that the change might essentially affect the aptitude of the atmosphere for the functions required of it; and that so great an innovation might be found, in this respect, not to accord with the order and economy of nature?

The relation of the animal part, and the vegetable part of the creation to each other, through the medium of the atmosphere, comes in aid of the reflection suggested by the general relation between the atmosphere and both. It seems to be now well understood, that the atmosphere when respired by animals becomes unfitted for their further use, and fitted for the absorption of vegetables; and that when evolved by the latter, it is refitted for the respiration of the former: an interchange being thus kept up, by which this breath of life is received by each, in a wholesome state, in return for it in an unwholesome one.

May it not be concluded from this admirable arrangement and beautiful feature in the economy of nature, that if the whole class of animals were extinguished, the use of the atmosphere by the vegetable class alone, would exhaust it of its life-supporting power; that in like manner, if the whole class of vegetables were extinguished, the use of it by the animal class alone, would deprive it of its fitness for their support? And if such would be the effect of an entire destruction of either class, in relation to the other, the inference seems to press itself upon us, that so vast a change in the proportions of each class to the other, and in the species composing the respective classes, as that in question might not be compatible with the continued existence and health of the remaining species of the two classes.

The immensity of the atmosphere, compared with the mass of animals and vegetables, forms an apparent objection only to this view of the subject. The comparison could at most suggest questions as to the period of time necessary to exhaust the atmosphere of its unrenewed capacity to keep alive animal or vegetable nature, when deprived, either, of the support of the other. And this period contracts itself at once to the imagination, when it is recollected that the immensity of the atmosphere is the effect

of its elasticity and rarefaction. We know from the barometer, that condensed to the specific gravity of Mercury, its rise above the surface of the earth would be but about thirty inches; and from the well pump, that condensed to the specific gravity only of water, which is nearly the same with that of the human body, its rise would be little more than as many feet; that is, a little more than five times the human stature. It is found that a single human person employs in respiration not less than sixteen or eighteen times his own weight of common air, in every 24 hours. In different degrees, some greater, some less, the case is the same with most other animals. Plants make a correspondent use of air for their purposes.

Other views of the economy of nature coincide with the preceding. There is a known tendency in all organized beings to multiply beyond the degree necessary to keep up their actual numbers. It is a wise provision of nature—1, to guard against the failure of the species: 2, to afford in the surplus, a food for animals whether subsisting on vegetables, or on other animals which subsist on vegetables. Nature has been equally provident in guarding against an excessive multiplication of any one species which might too far encroach on others, by subjecting each, when unduly multiplying itself, to be arrested in its progress by the effect of the multiplication—1, in producing a deficiency of food; and where that may not happen,—2, in producing a state of the atmosphere unfavourable to life and health. All animals, as well as plants, sicken and die in a state too much crowded. It is the case with our domestic animals of every sort, where no scarcity for food can be the cause. To the same laws mankind are equally subject. An increase, not consisting with the general plan of nature, arrests itself.—According to the degree in which the number thrown together exceeds the due proportion of space and air, disease and mortality ensue. It was the vitiated air alone which put out human life in the crowded hole of Calcutta. In a space somewhat enlarged, the effect would have been slower, but not less certain. In all confined situations, from the dungeon, to the crowded workhouses, and from these, to the compact population of overgrown cities, the atmosphere becomes in corresponding degrees unfitted by reiterated use, for sustaining human life and health. Were the atmosphere breathed in cities not diluted, and displaced by fresh supplies from the surrounding country, the mortality would soon become general.—Were the surrounding country thickly peopled and not refreshed in like manner, the decay of health, though a later, would be a necessary consequence. And were the whole habitable earth covered with a dense population, wasteful maladies might be looked for, that would thin numbers into a healthy proportion.

[*To be continued.*]

Guinea Grass.

Observations on Guinea Grass, by S. Brown, M. D. of Natchez, Mississippi Territory.

Read, July 13th, 1813.

Six years ago, I saw one or two plants of the Guinea grass, in the garden of M. Treme, near the city of New-Orleans; but as I was, at that time, no way concerned in agricultural pursuits, it attracted little of my attention. Last autumn, I again met with it, in great perfection, at Mr. Munson's, a few miles north of Fort Adams.—Although Mr. Munson had not more than half a dozen of plants, he obligingly furnished me with a pint of seed, which I shared with my friends, in this territory, in Tennessee and Kentucky.—Mr. Abner Green of Adams county, had for two or three years, cultivated this luxuriant grass, but I cannot learn that any person except Mr. Munson had followed his example. From two acres of this grass, Mr. Green fed from thirty to forty or fifty animals every day during the summer season.

As neither Mr. Green nor Mr. Munson had any knowledge of the history of this grass, and as I had determined to cultivate it, I sought for further information in such books as were within my reach.

In Bryan Edward's, History of Jamaica, we have the following account of it.

"Guinea grass may be considered as next to the sugar cane, in point of importance, as most of the grazing farms or pens* throughout the Island, were originally created, and are still supported chiefly by means of this invaluable herbage. Hence the plenty of horned cattle both for the butcher and planter, which is such, that few markets in Europe can furnish beef at a cheaper rate or of better quality than Jamaica. Perhaps the settlement of most of the north side parishes is wholly owing to the introduction of this excellent grass, which happened about 50 years ago, the seeds having been brought from the coast of Guinea, as food for some birds which were presented to Mr. Ellis, chief justice of the Island. Fortunately the birds did not live to consume the whole stock, and the remainder being carelessly thrown into a fence grew and flourished, and it was not long before the eagerness displayed by the cattle to reach the grass, attracted Mr. Ellis' notice, and induced him to collect and propagate the seeds; which now thrive in some of the most rocky parts of the Island, bestowing verdure and fertility on the lands which otherwise would not be worth cultivation."—Vol. 1. page 185.

From Willich's Domestic Encyclopedia, I make the following extract.

"Guinea grass† a valuable species of herbage thus denominated as it was first discovered on the coast of Guinea, whence it was brought to Jamaica and afterwards imported into this country—(England.)

In point of real utility, this plant ranks in Jamaica next to the sugar cane; for the breeding farms throughout the Island were originally established and are still supported chiefly by means of the Guinea grass which bestows verdure and fertility on lands that would otherwise not deserve to be cultivated. About ten years since it was introduced into the East Indies, where it is now successfully cultivated, and grows to the height of seven feet; it admits of being frequently cut, and makes excellent hay: cattle eat it both in a fresh and dry state with great avidity; hence the culture of this valuable herbage has been strongly recommended to the farmers of Cornwall and Devonshire.—"

The subsequent remarks on the culture of this grass are by the late H. Laurens, of S. Carolina, and added to the foregoing by the American editor of that work.

In the last spring I procured from Jamaica three half pints of Guinea grass seed which I planted in drills of one fourth of an acre of *very indifferent land.* The seed sprung, and soon covered the ground with grass, four feet high and upwards. Being desirous of saving as much seed as possible, I cut one bundle of grass for horses: they ate it all with great avidity.* In August I took one of the grass roots and divided it into 28 parts, which were immediately replanted; every part took root, and the whole are now growing very finely, and seeding. I am of opinion this grass will make the best pasture we can wish for. From former experience I have reason to believe the Guinea grass is perennial. It is easily managed, requires but one good hoeing, after which it will take care of itself. Domestic Encyclopedia, article Guinea grass."

With this little stock of information I commenced my experiments. In the month of April, I prepared a piece of ground in the city of Natchez, and planted the seed I had reserved for my own use, in holes two feet distant from each other. The season proving unusually cold, and torrents of rain falling almost every day, all our small seeded crops were either totally lost, or materially injured. The vegetation of the Guinea grass seed was so much retarded, that until some time in May, I could discover no young plants.† They at length made their appearance,

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* Many of the pens of Guinea grass, in Jamaica, are of great extent; some contain 7 or 800 acres. I am informed by gentlemen who have lately observed it in that Island, that it is perennial, and that it forms a turf, which is divided and set out for the purpose of extending the pasture grounds. Some of it was brought from Jamaica to New Orleans, in June last, by captain Califfe, who was highly gratified at finding it growing in such perfection in Natchez. He had been informed in Jamaica that it was difficult to procure seed that would vegetate. I gave him a quantity of it for his friends in N. Carolina.

† I could have wished that the author of the Domestic Encyclopedia, had given us the botanical name and characters of this plant. For want of books I am unable to supply this deficiency. [*A botanical description is subjoined to this paper.*] Bruce in his Travels in Egypt and Abyssinia mentions Guinea grass, but gives no account of its character or properties. I have conversed with many natives of Africa, who recollect to have seen it in many parts of that continent.

* It is curious to calculate the quantity which an industrious planter can obtain from one seed. Suppose that each of the 28 divisions of the root produced less than one half the number of stalks I obtained from one seed, for instance 50 stalks, this will give 1400 stalks in one season, from a single seed. On good soil, in a favourable year, these will all attain the height of at least seven feet.

† Persons who have resided in the vicinity of Natchez for 37 years, do not recollect to have seen frost in May before this year, (1812.) On

in some parts of the lot. But some seeds remained six weeks in the earth, before they vegetated: and most of those gentlemen, to whom I had given seed, supposing them to have been gathered too green, appropriated their grounds to other purposes, or suffered the weeds to smother the young grass.

As soon as I could designate the Guinea grass, I had the ground well hoed, and where two or more plants came up together, I had the supernumeraries transplanted to spots where the seed had failed.—When the plants attained such a size as would admit of it, I took them up, and dividing the roots, set them out when the soil was wet, and in this way filled up the vacancy in the ground I had appropriated to my experiments.

At Percyfield, near Fort Adams, Mr. Oglesby, my manager, planted about the eighth of an acre of *very fertile land*, with plants obtained from Mr. Munson, in the first and second week of May. They grew without any trouble except that of cutting down the first growth of weeds.—On the 20th of June, he began to cut it for the use of the plough horses and mules and continued to supply them with as much as they could eat of it, during the whole summer. On the 25th of September, he wrote me, that he had cut it *four times*. From 20 roots he obtained at the *fourth cutting*, 250 pounds of green grass, and in two weeks, he would cut it the *fifth time*. The weather being very unfavourable, he did not succeed in curing the hay, by weighing which, he intended to ascertain the loss in drying.*

I did not begin to cut that which I had planted in Natchez, until the 16th of July, I then weighed the produce of one seed, in the presence of a number of gentlemen at Mr. Robinson's Hotel. One hundred and sixty four stalks, from six to seven feet high, growing from one root weighed together 30 pounds. At Mr. Winn's tavern, on the 10th of September, a *second cutting*, from one seed weighed 35 pounds. The number of stalks was 184, some of which measured ten feet 11 inches in length. Some part of the lot in Natchez is very poor soil, and the grass on those places did not grow higher than six or seven feet. But on a good soil, in a favourable season, in this climate, I am persuaded it is a very moderate estimate to allow to every square yard 10 pounds at a cutting, when we cut only three times in the season. This would give 30 pounds to every square yard, or 147,000 pounds of green grass to the acre. But this production seems so enormous, that I should not have ventured on such a calculation had I not the respectable authority of Mr. Edwards to support me. He asserts that the Scots grass† which he seems to consider far inferior to the Guinea grass, is so productive, that one acre of it will support five horses the whole year round, allowing each horse 56 pounds per day, which is 102,200 pounds per acre.

It is not pretended that the Fiorin grass‡ which, of late, has excited so much attention in Europe, will produce more than nine tons of hay per acre, and Mr. Livingston bestows great encomiums on Lucerne, which requires much more cultivation than Guinea grass, and yields only 4500 pounds per acre, at three cuttings. I am informed, that the best timothy meadows in Kentucky never produce more than six tons per acre, in the most favourable seasons. But I am sufficiently aware of the fallacy of such calculations as I have been making. An experiment on *a large scale* is absolutely necessary to the attainment of an accurate result. This season has been very wet, and grasses of all kinds, in this territory, have grown to an unusual length Planters have found it necessary to make the most vigorous exertions to save their crops of corn and cotton from being choaked with grass and weeds. But admitting that my calculations are extravagant, let us suppose that an acre will produce *only one third* of what I have stated, still we must consider Guinea Grass as the most valuable of all the known grasses.

I regret very much that Mr. Laurens did not mention the grounds upon which he expresses an opinion that this grass is perennial. In Jamaica, I have no doubt it is so, but in this climate, I am persuaded, it is annual, and that during the months of September and October, it drops as much seed as is requisite to produce the crop of the ensuing year.* Indeed it is necessary every spring to cut down the superfluous plants in order to leave room for the spreading of those which are suffered to come to maturity—I have tried Mr. Lauren's method of dividing the roots and transplanting them, and find it answers very well for filling up such vacancies as happen from the imperfection of the seed, or from other causes, and which would occasion a great waste of labour and of land. The sooner in the season this is done the better, for I did not find that those plants which were thus removed in August, attained the usual size. In June and July this plan will succeed perfectly well.

I find very little difficulty in collecting the seed,† I have already obtained a bushel in return for three or four spoonfuls which I sowed on my lot in town—I cut off about two feet of the top with the panicle, as soon as the seed begins to fall, and after it is dry, comb out the seed with a coarse comb—I hope to to collect at least two bushels of seed during the autumn.

As the seeds vegetate very slowly, and as many of them are imperfect, the most certain mode of obtaining the young plants, would be that practiced by the cultivators of tobacco, who, early in the season, prepare a small spot of ground by burning the surface. On this they sow the seed, and tread them down with their feet. They then cover the spot with brush wood, to protect it from the action of cold winds, and the seed from the depredations of birds. As soon as the plants have attained the height of two or three inches, and when the danger of frost is past, they should be removed to the ground where they are to stand, where they readily take root.‡ A rich black mould, and a soil somewhat moist, I think produces the most luxuriant grass, but I have had very little experience on the subject. I hope that before many years, it will be tried in every climate in the United States, and on every variety of soil.‖ No kind of grass with which I am acquainted, supports the heat of the sun so well, and this property, was it even less productive, would recommend it to the notice of the agriculturist, for, from the first of July, until it is killed by the autumnal frosts, it will afterritory, we may plant Guinea grass between the rows, and when we take out the corn in October, the field will afford abundance of food for fattening cattle. I made a small experiment in this way, and have no doubt it may prove useful to those who have not a sufficiency of cleared land. If corn is planted in the succeeding March, the grass will not do any injury, as it does not vegetate until about the beginning of May. I think the seed might be sowed on wheat, in February or March, and as we cut our wheat about the 10th of May, the young grass would grow up among the stubble.

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the nights of the 3d and 4th of May the hoar frost was so severe as to destroy almost all the tender plants in the territory.

* See certificate of Mr. Oglesby.

† Panicum hirtellum Lin.

‡ For an account of this grass, see Dr. Mease's Archieves of useful knowledge," Vol. II. No. 3.

The plate of it given in that work might be readily mistaken for the Bermuda grass in this Territory, which the late much lamented Mr. Dunbar, had so much merit in introducing, and which will be found so valuable when the planters begin to perceive the folly of increasing the number of their slaves instead of breeding Merino sheep. Few men were more capable of forming a just estimate of the comparative value of the stock farm and the cotton plantation than Mr. Dunbar. The cultivation of cotton, he has often observed yielded a miserable return compared to the profits of a stock of Merinos. His solicitude to procure that precious breed of sheep, for some months before his death, ought to suggest to his survivors the true and perhaps the only means of restoring the country to its former flourishing condition.

* Since writing the above, Mr. Munson informed me that Mr. Laurens was correct, and that the roots which he examined in the last spring were perfectly green and putting forth a great number of shoots.

† After our early corn is bent down in this

‡ There is no more difficulty in transplanting it, than in planting tobacco or cabbage. A basket or two of the young plants will be sufficient for an acre.—One hundred plants would enable a poor family to keep a cow in town, or to supply a dray horse with green food all summer. How much would the general cultivation of this grass add to the comfort of the poor and middling classes of society!

‖ The planters are beginning to be sensible of the importance of winter pasturage in this climate, where snows seldom remain 24 hours. Wheat fields, and the tall meadow oats, cavena elatior,) may be pastured from November until March, when the white clover begins to supply our animals with green food. This grows luxuriantly until the month of July. Then Guinea grass will furnish a still more grateful food, until our early wheat lots require to be eat down, in Oct. or Nov. Wheat, tall meadow oats, clover and Guinea grass, afford green food every day in the year, in the climate of the Mississippi Territory. In what part of the Union can sheep be raised with so little expense? In most parts of Europe, and in the middle and northern States, the winter keeping constitutes a principal part of the expense, and the severe frosts and deep snows destroy multitudes of lambs.

ford a constant, and an abundant supply of green food, and consequently enable the farmer, whatever may happen to his other meadows, to lay up a plentiful stock of hay, for the winter. If the hay is cut before the grass has grown too tall, less than two days' sunshine will dry it completely. It is uncommonly fragrant, and horses prefer it greatly to the best corn blades. This experiment was tried on the 28th of September, when I sent Mr. Winn, of Natchez, a small bundle of hay, which had been exposed to the sun about a day and a half. Mr. Winn put it into the bottoms of his mangers, and covered it with the best corn blades he could procure. The horses threw aside the fodder, and ate the hay with eagerness.

An acre of corn will not yield more than from 500 to 1000 pounds of dry blades. Considerable labour is necessary in gathering them; they are preserved with difficulty, as we cannot choose a favourable season, and with us they are always to be carried to the stack on the backs of labourers. As the Guinea grass, on the contrary, retains its verdure for several months, we can always cut it when the weather is the most promising; we can cultivate it on most plantations, near the place where we wish to feed it, or it may be carted out of the enclosure where it grows. If subsequent experience should confirm the principal facts which I have stated with regard to this grass, the intelligent farmer will soon perceive the advantage of cultivating it, instead of trusting to the scanty supply of blades, which he obtains from his corn fields, with such a waste of time and human labour. A Pennsylvania farmer who knows the advantage of a Timothy or Clover meadow, considers it a folly to spend time in collecting corn blades. If Guinea grass succeeds as well with others, and in every season, as it has done this season with me, and, as it had done in the West Indies for more than half a century, the planters of the south will have no reason to envy their northern neighbours, their luxuriant clover pastures, or their numerous ricks of Timothy hay. Meadows are generally the most fertile part of every farm where they exist, and their value is augmented by their contiguity to the farm houses. If Guinea Grass is substituted for Clover, Timothy, and Lucerne, at least seven eights of all the grounds appropriated to those crops will be given to the cultivator for the purpose of raising sustenance for the human species. To what amount this change will increase the sum of national wealth, I leave those to estimate, who are more conversant with such calculations.

Certificates respecting Guinea Grass.

February 25, 1812.

Dear Sir—Your favour of the 15th inst. reached me yesterday. In reply to your inquiries respecting the Guinea grass, I will with pleasure give you such information as I have been able to make, to fulfil your wishes.

The first winter after I sowed the seed was fortunately mild, as it did not go to seed, in the spring it put up from the old roots. The branches I transplanted, and they grew luxuriantly. It seeded late in October. The roots were killed by the frost, but in the spring following, the seed that fell came up abundantly, these plants I divided, and transplanted about three acres of ground, but owing to the spring being very dry, this could not be effected until the month of June, wishing to have the ground well stocked with seed, I made but little use of it. It seeded much earlier this year, and much more abundantly In the spring following, (that is last spring) it came up in great abundance; when it got about two feet high, I began to use it for my riding horses and work creatures, in all not less than thirty head, and the growth was so rapid, that not more than half the ground was cut over, and some of this not more than once: my son, who was more particular than myself, informed me it grew six inches in twenty-four hours. The seed sprouts about the time of the common grasses, coming up with a single spire and putting out a vast number of branches, something like wheat, each of which may be transplanted. This winter I have reason to believe the roots are also killed. It seeded in great abundance last fall, and much earlier than the two previous years. It continues green until it is killed by the frost. On the river I am persuaded it would seldom if ever be destroyed in the winter.

I am respectfully, your obedient servant,

ABNER GREEN.

Henry Farmer, Esq.

On the 16th of July, 1812, I weighed the first cutting of one plant of Guinea grass, which grew in Dr. Brown's lot. Its weight was thirty pounds of green grass. THOMAS ROBINSON.

Wilkinson Co. M. T. October 10, 1812.

I have frequently examined your lot of Guinea grass at Percyfield, and having for many years been in the habit of viewing both timothy and clover meadows, in the state of Virginia, where plaster of paris has been used, I have no hesitation in saying, that one acre of Guinea grass will produce more than six times the quantity I have ever known produced by an acre of any other kind of grass. M. BRONAUGH.

Dr. Brown.

Percyfield, Wilkinson Co. M. T. October 15, 1812.

I have for many years been accustomed to both timothy and clover meadows, and have frequently assisted in cutting some of the best in the state of Kentucky. At Percyfield, near Fort Adams, I cultivated a lot of Guinea grass, somewhat less than a quarter of an acre, from which I fed six or eight horses, during the summer of 1812. I planted it the second week in May, and began to cut it the 20th of June, and cut it five times before the 15th of October, and obtained from each plant (which occupied a square yard) about sixty pounds of green grass. I have frequently observed it to grow four inches in twenty-four hours. From the astonishing growth, and from the result of all my experiments, I have no hesitation in saying, that it will yield ten times as much grass as any timothy or clover meadow I have ever seen. It is now (15th Oct.) as green as it was in June, and animals are remarkably fond of it, both green and dry. The hay is excellent, and cures without difficulty.

JOSEPH B. OGLESBY,
Of Jefferson Co. Kentucky.

Guinea grass, according to Browne, is a species of Holcus, the character of which, he says, agree pretty well with those of *Panicum* in general, but the flowers commonly grow very luxuriant, and though often hermaphrodite, are generally observed to be male and female, distinct, surrounded by separate involucres, and standing on distinct pedicels, within the same calyx See Browne's Civil and Natural History of Jamaica. Folio, page 366 London, 1756.

Dr. Martyn treats of it under the genera *Holcus* and *Panicum.*

Mr. Correa de Serro informs me, that in "the botanic garden at Paris, where Guinea grass has been with great care cultivated by Mr. Thouin, it is known by the name of *Panicum altissimum*, and it is very probable, that the frequent abortion of either of the sexes, in a great number of flowers, was the reason why Browne, and other scrupulous and literal Linnean botanists, put it in the genus *Holcus*, notwithstanding all its characters were of *Panicum.*" Dr. Martyn describes it among the panicums, under the name of *Panicum maximum*, in the following words:

Panicum maximum. Culms from five to ten feet high; upright, simple, even. Leaves lanceolate, towards the top convolute and sharp, smooth, except at the edge, which is rugged, and at the base which is rough haired. Panicle erect, a foot long and more; the lower branches in whorls, the upper in pairs. Florets numerous, alternate, ovate, sharpish, pressed to the raceme; on short, subflexuose pedicels. Spikelets polygamous. Outer valve of the calyx very small, inner oblong, snarpish, pale. Instead of the hermaphrodite, there is often a female floret, with a male at the side of it, or a female alone, without the hermaphrodite and male. Seed oblong, shining. In Jamaica it flowers in October.

Directions for the culture of Guinea grass will be found in Dr. Martyn's edition of Miller's Gardener's Dictionary, under the article of *Holcus pertusus.*

Besides the account of Guinea grass in Edwards, and the Domestic Encyclopedia, additional information may be obtained by referring to the Letters and Papers of the Bath and West of England Society, vol. 5, and Young's Annals of Agriculture, vols. 9 and 13. All agree in the extraordinary fattening properties of this plant, and to our southern states it cannot fail of being an incalculable benefit. J. M.

From the Albany Argus.

Treatise on Agriculture.

SECTION III.

THEORY OF VEGETATION.

(*Continued from No.* 20, *p.* 154.)

3d. Of *air* and its agency in vegetation:

A seed deprived of air will not germinate, and a plant placed under an exhausted receiver, will soon perish. Even in a close and badly ventilated garden, vegetables indicate their situation; they are sickly in appearance, and vapid in taste. These facts sufficiently show the general utility of air to vegetation; but this air is not now the simple and elementary body, that the ancient chymist described it to be. Priestly first,(1) and Lavoisier after him, analysed it and found, that when pure, it consisted of about 70 parts of azote, 27 of oxigen, and 2 of carbonic acid. In

(1) See Priestly's Experiments and Observations on different kinds of Air, begun in 1767.

its ordinary (or impure) state, it is loaded with foreign and light bodies, such as mineral, animal, and vegetable vapours, the seeds of plants and the eggs of insects, &c. It is to this *aggregate*, that vegetation owes the services rendered to it by air? And if not, to *how many* and to which of its regular constituents, are we to ascribe them? This inquiry will form the subject of the present article.

All vegetables in a state of decomposition, give *azote*; and some of them (cabbages, radishes, &c.) give it in great quantity. This abundance, combined with the fact, that vegetation is always vigorous in the neighbourhood of dead animal matter, led to the opinion, that azote contributed largely to the growth of plants; but experiments, more exactly made and often repeated, disprove this opinion, and show that in any quantity it is unnecessary, and that in a certain proportion it is fatal to vegetation.

In *hydrogen gas*, plants are found to be variously affected, according to their local situation; if inhabitants of mountains, they soon perish—if of plains, they show a constant debility—but if of marshy grounds, their growth is not impeded

Carbonic acid is formed and given out during the processes of fermentation, putrefaction, respiration, &c. and makes 28 parts out of 100 of atmospheric air. It is composed (according to Davy) of oxigen and carbon, in the proportion of 34 of the former to 13 of the latter. It combines freely with many different bodies; animals and vegetables are almost entirely composed of it; for the *coal* which they give, on combustion, is but *carbon* united to a little oxigen, &c. Priestly was the first to discover, that plants *absorbed carbonic acid*; and Ingenhouse, Sennebier and De Saussure have proved, that it is their *principal aliment*. Indeed the great consumption made of it, cannot be explained by any natural process, excepting that of vegetation. On this head, we cannot do better than digest the experiments of the last of these chymists into a few distinct propositions:(2)

1. In pure carbonic acid gas, seeds will swell but not germinate. 2. United with water, this gas hastens vegetation. 3. Air containing more than one twelfth part of its volume of carbonic acid, is most favourable to vegetation. 4. Turf, or other carbonaceous earth, which contains much carbonic acid, is unfavourable to vegetation until it has been exposed to the action of atmospheric air, or of lime, &c. 5. If slacked lime be applied to a plant, its growth will be impaired, until the lime shall have recovered the carbonic acid is lost by calcination. 6. Plants kept in an artificial atmosphere and charged with carbonic acid, yield, on combustion, more of that acid than plants of the same kind and weight growing in atmospheric air. 7. When plants are exposed to air and sunshine, the carbonic acid of the atmosphere is consumed, and a portion of oxigen left in its place. If new supplies of carbonic acid be given to the air, the same result follows; whence it has been concluded, that air furnishes carbonic acid to the plant, and the plant furnishes oxigen to the air. This double function of absorption and respiration, is performed by the green leaves of plants.(3) 8. Carbon is to vegetation, what oxigen is to animal life; it gives support by purifying the liquids and rendering the solids more compact.

4th. Of *light*, *heat*, and *electricity*, and their agency in vegetation:

When deprived of light, plants are pale, lax and dropsical; restored to it, they recover their colour, consistency and odour. If a plant be placed in a cellar, into which is admitted a small portion of light through a window or cranny, thither the plant directs its growth and even acquires an unnatural length in its attempt to reach it.(4) These facts admitted, no one can doubt the agency of light in vegetation; but in relation to this agency, various opinions exist; one, that light enters vegetable matter and combines with it; another, that it makes no part either of the vegetable or of its aliment, but directly influences substances which are alimentary;(5) and a third, that besides the last effect, it stimulates the organs of plants to the exercise of their natural functions.(6)

Without doing more than state these opinions, we proceed to offer the results of many experiments on this subject. 1st. That *in the dark*, no oxigen is produced, nor any carbonic acid absorbed; on the contrary, oxigen is absorbed and carbonic acid produced. 2d. That plants exposed to light, produce oxigen gas in water. 3d. That *light* is essential to vegetable transpiration; as this process never takes place during the *night*, but is copious during the *day*; and, 4th. That plants raised *in the dark*, abound in watery and saccharine juices—but are deficient in woody fibre, oil and resins; whence it is concluded, that saccharine compounds are formed in the night, and oil, resins, &c. in the *day*.

When the weather is at or below the freezing point, the sap of plants remains suspended and hardened in the albumum;(7) but on the application of *heat*, whether naturally or artificially excited, this sap is rendered fluid, is put into motion and the buds begin to swell. Under the same impulse, through the medium of the earth, the roots open their pores, receive nutritive juices, and carry them to the heart of the plant. The leaves, being now developed, begin and continue the exercise of their functions, till winter again, in the economy of nature, suspends the operations of the machine. Nor is its action confined to the circulation of vegetable juices, without vapour (its legitimate offspring) the fountain and the shower would be unknown—nor would the great processes of animal and vegetable fermentation and decomposition go on. Without rain or other means of ameliorating the soil, what would be the aspect of the globe? what the state of vegetation? what the situation of man?

The diffusion of *electrical* matter, found in the air, and in all other substances, furnishes a presumption that it is an efficient agent in vegetation. Nollet and others have thought that artificially employed, it favoured the germination of seeds, and the growth of plants: and Mr. Davy "found, that corn sprouted more rapidly in water, *positively* electrified by the voltaic battery, than in water *negatively* electrified"(8) These opinions have not escaped contradiction, and we do not profess to decide, where doctors disagree.

5th. Of *stable yard manure*, *lime*, *marl*, and *gypsum*, and their agency in vegetation:

We have already said, that vegetables in the last stage of decomposition, yield a black or brown powder, which Mr. Davy calls a "*peculiar extractive matter, of fertilizing quality*," and which the chymists of France have denominated *terreau*. This vegetable residuum is the simple mean employed by nature to re-establish that principle of fertility in the soil, which the wants of man and other animals are constantly drawing from it. It was first analysed by Hassenfratz, who found it to contain an oily, extractive and carbonaceous matter, charged with hydrogen; the acetates and benzoates of potash, lime and ammoniac; the sulphates and muriates of potash, and a soapy substance, previously noticed by Bergman. Among other properties (and which shows its combustible character) is that of absorbing, from atmospheric air, its oxigen, and leaving it only azote. This was discovered by Ingenhouse, who, with Saussure and Bracconnet, pursued the subject by many new and interesting experiments, the result of which is:

1. That the oxigen thus absorbed, deprives the terreau of part of its carbon, which it renders soluble and converts into mucilage; and

2. That the carbonic acid, formed in the process, combines with the mucilage, and with it is absorbed by the roots of plants.

If we put a plant and a quantity of slacked lime under the same receiver, the plant will perish; because the lime will take from the atmospheric air all the carbonic acid it contains, and thus starve the plants. Vegetables, placed near heaps of lime in the open air, suffer from the same cause and in the same way; but though lime, in *large* quantities, destroys vegetation, in *small* quantities it renders vegetation more vigorous. Its action is of two kinds—mechanical and chymical; the first is a mere division of the soil, by an interposition between its parts; the second, the faculty of rendering soluble vegetable matter, and reducing it to the condition of terreau.

The *mechanical* agency ascribed to lime, belongs also to *marl* and to *ashes*, and in an equal degree; but their *chymical* operation, though similar, is less.(9)

Gypsum is composed of lime and sulphuric acid. Mayer was the first to present to the public a series of experiments upon it, in its relation to agriculture. Many chymists have followed him, and a great variety of opinion yet exists with regard to its mode of operation, Yvart thinks, that the action of gypsum is exclusively the effect of the sulphuric acid, which enters into its composition; and founds this opinion upon the fact, that the ashes of turf, which contain sulphate of iron and sulphate of alumina, have the

(2) Recherches chymiques sur la vegetation, chap. ii.

(3) This was a discovery of Sennebier.

(4) It is by a knowledge of this fact, that gardeners bleach chicory and celery, &c.

(5) See Fourcroy, vol. viii.

(6) See Chaptal on Vegetation.

(7) Knight's Observations, &c.

(8) Davy's Elements.

(9) Vegetable ashes are lime, combined with an earthy saline matter.

same action upon vegetation as gypsum. Laysterie, observing that plants, whose roots were nearest the surface of the soil, were most acted upon by plaster, concludes, that gypsum takes from the atmosphere the elements of vegetable life and transmits them directly to plants! Bose intimates, that the *septic* quality of gypsum [which he takes for granted] best explains its action on vegetation; but this opinion is subverted by the experiments of Mr. Davy—who found, that of two parcels of minced veal, the one mixed with gypsum, the other left by itself, and both exposed to the action of the sun, the *latter* was the first to exhibit symptoms of putrefaction. Mr. Davy's own belief on this subject is, that it makes part of the food of vegetables, is received into the plant and combined with it. The last opinion we shall offer on this head, is that of the celebrated Chaptal. "Of all substances, gypsum is that of whose action we know the least. The prodigious effect it has on the whole race of trefoils (clover, &c.) cannot be explained by any *mechanical* agency—the quantity applied being so small—nor by any *stimulating power*—since gypsum, raw or roasted, has nearly the same effect; nor by any absorbent quality, as it only acts when applied to the leaves. If permitted to conjecture its mode of operation, we should say, that its effect being greatest when applied to the wet leaves of vegetables, it may have the faculty of absorbing and giving out water and carbonic acid, little by little, to the growing plant. It may also be considered as an aliment in itself; an idea much supported by Mr. Davy's experiments, which show, that the ashes of clover yield gypsum, though the clover be raised on soils not naturally containing that substance."

(*To be continued.*)

HYDROPHOBIA.

Elmwood, Aug. 10th, 1819.

Mr. Skinner,—I perceive that the present time, though in common with every mid-summer, exciting some alarm, has awakened the attention of the public in no common degree to Hydrophobia, and becomes a suitable opportunity for every one who has any skill or knowledge in that disease to lend his aid. It would be criminal for any man to impose his theories on the public, in a disease, that gives to his fellow creature but one fleeting opportunity, to avert the shaft of death. One object in the present communication, is to remind the public, that a few years back, a benevolent Society was formed in Baltimore, to prevent the poor, and superstitious from falling into the hands of Quacks, and Patentees of Nostrums, and to bring cases of threatened or actual Hydrophobia, under the management of regular Physicians.—The Rev. Dr. Inglis was made president, and Drs. Smith, Donaldson, Baker, Page, Gibson and Wilkins were appointed a board of managers. As an excitement to cause patients to be brought in from the country, it was agreed, that their boarding should be paid out of the funds of the Society, when they were unabled to pay, and in no case should any thing be charged for medicine. It was stipulated at the offset of the Society, that whatever internal remedies might be used, that in no case should the knife, or caustic be omitted; for it was on this point, namely, *a belief that the only means of safety, was to be expected from instantly extirpating the diseased part, and attending to the wound*, that the Society originated. It might, therefore, well be called the Benevolent Surgical Society, for the prevention of Hydrophobia. It was too obvious, there excited a disposition in the public mind, to neglect the wound and trust to any external or internal application that might be suggested by that set of gentry who are ever watching the tide of credulity to cast in their bait. It was those fellows who in Pliny's day, cut off a joint of the dog's tail, to prevent Hydrophobia, but when that trick failed, they went to the other extremity of the animal, and mutilated the poor dogs' tongues, by cutting out one of the leaders, pretending it was a worm that caused madness; and, for this, they obtained a dollar. When this barbarous practice also failed, which continued till lately, they wisely went to the patient, where they could obtain a better fee, and more durable practice. Hence the introduction of Argillaceous stones, that excite wonder by adhering to the wound, and of the following list of infallibles each of which has some peculiar mark to recommend it; *Liverwort*, which has something uncommon in the substance of its foliage. *Hyoseris amplexicaulis* in the veins of its radical leaves. *Anagallis. Scultellaria*, and Hedysarium Polistachia in their capsules, all of which have their advocates, who can boast of their hundred supposed cures. It is a lamentable fact, that where superstition spreads her ebon wings, from thence we hear of those nostrums, and of numerous deaths from Hydrophobia. It would be a valuable addition to the Littany to insert a prayer to be delivered from Quackery, as also from superstition—no painter ever attempted this monster, because he would soon find it impossible to form any image of a being that required organs, constructed to hear only what was fabulous, and swallow nothing that was not monstrous. Scultellaria if that be the medicine alluded to by Drs. Stillwell, and Robo-son, is a powerful bitter, and probably a narcotic; if it be *St. Integrifolia*. With due respect for the judgment of these gentlemen, I suspect they will never find another case to suit Scultellaria so well. It certainly was a peculiar case, and was one of those anomalous cases that might stand between Hydrophobia and Tetanus, or form a link with Histeritis or Histeria. That Histeria is some times accompanied with a dread of water, I have the history of two cases to prove; and that the bite of a dog *not mad* will produce disagreeable irritations, ending in permanent contractions of the fingers or wrist, I have also proof. Bark and wine I think would have answered the New York case, as well as Scultellaria. The writer of the above has nothing to boast as to his peculiar knowledge in Hydrophobia, but he has attended to it with only one idea or remedy for twenty years, and has met with twelve or fifteen cases of complete inoculation of the virus: all of which, have been extirpated in various times, from one hour to three days after the bite, and all with equal success. In one case there were twelve superficial wounds, and in this case, a horse and a cow bitten at the same time and place perished, and if, by the intricacy of the wound, no other means were practicable he would trust to suppuration of the wound, for a month, rather than to all the medicine in the Pharmacopœa.

An eminent practitioner in this state, told the writer of this, that he had during his practice, forty cases of bites, by animals, supposed to be mad, all of which were successfully treated by suppurating the wound with mercurial; this is some proof of an alliance with Tetanus; a proof that the disease may be made local, and to exhaust its virus without affecting the system. The vegetable caustic beat up in a mortar, with a little water to the consistence of thin cream, and injected into the wound, or thrust in with a camel's hair pencil or with a bouge of linen wrapped round a knitting needle, so as to make a firm roll, as big as the wound, will in one minute make the wound as large again as at first, taking off all the diseased part—and it must be a ragged wound indeed, that the caustic from an elastic bag syringe, especially when made a little thinner, will not clear out. A little vinegar injected will instantly stop the caustic from corroding too freely—some suppurating ointment, made with Venice turpentine, and red precipitate will keep the wound in good purulent condition, and the longer the better.

It is most earnestly recommended to all the towns and cities in the United States, to form Societies upon the same plan as that in Baltimore, as the most sure way of arresting Hydrophobia—for it only requires to be taken out of the hands of the ignorant and superstitious, to be rendered one of the most unlikely diseases to produce death. SILVANUS.

THE FARMER.

BALTIMORE, FRIDAY, AUGUST 20, 1819.

The 19th day of August has passed—twelve months have elapsed since the commencement of the *Maryland Censor*, and the *American Farmer* stands now on its own footing. All obligations to the subscribers to the *Maryland Censor* having been faithfully and honestly discharged, it remains now for those who received that paper, and the *American Farmer* in lieu of it, to discharge *their* part of the obligation by paying up their dues.

No disrespect whatever is intended towards those whose papers have been stopped in consequence of their not having paid up—It is altogether an affair of common, downright, fair dealing between man and man.—To such subscribers we can say,—you have had my paper for your benefit on which my money and time and labour have been expended;—It is but honest that you should *now pay*, since you were not *compelled* to take the paper. There are amongst those who have neglected to pay, many gentlemen no doubt, who have, either forgotten, or postponed, from day to day, yet while they forget and postpone—the editor's expenses are going on—his family must live—the farmer's beef, and his chickens, and his potatoes and his corn meal must be bought and *paid for*.—To be brief.—we set out with one cardinal rule, on which not only the utility, but the very existence of the paper depends—We must be paid for the paper; we will not, because we cannot, send it

to any one *for nothing*. Those who think it not worth the money, will, of course, not patronise it;—and the best patronage is the price of subscription, paid yearly, in advance.

A Request.—The Editor of the Baltimore *American Farmer*, respectfully requests the favour of any of his subscribers to send him a small parcel, say half a pint, more or less, of Egyptian, Minorca and Talavera Wheats.—Also, a small parcel of *early* Corn—stating the time it usually takes to ripen. Any other rare or valuable seed or grain will be received with great thankfulness

The Editor has had frequent applications from Agricultural Societies for those articles, and his object in making this request is, to enable him to gratify these applications.

Editors of newspapers would serve the cause of Agriculture by copying this request.

We had intended, at first, to have given the whole of Mr. *Madison's* able address in this paper; but reflecting that all of our subscribers file their papers, we concluded to divide it, so as to give a greater variety of matter. It will be continued in the next two numbers.

The following letters, from valued friends in *Prince George's*, remind us of a suggestion we have often thought of making—that if the writers of the numerous letters we received from all quarters, would be good enough to mention, in short, general terms, the nature of the season, and the prospect as to the prevailing crops in the neighbourhood of the writers, it would be highly satisfactory, as such notices might be made the basis of periodical reports, from which an estimate might be formed as to the probable abundance or scarcity of any particular article. Accurate reports of this kind would promote regularity and uniformity in the prices of country produce, and the hard earned fruit of the husbandman's labour would no longer be so liable to the vicissitudes of an ever fluctuating market.

Prince George's County, Aug. 15.

We have little or no rain this season. Our crops of corn are lost. Many fields, with the most favourable weather will not produce a fourth of what they promised a few weeks past, and some little more than fodder. Our tobacco crops, are wretched in the extreme; not planted by nearly one half, and what stood is burning up. Our pastures might be burnt as we do the broom sedge in March and April. Our best springs have greatly failed, and in many places man and beast suffer for the want of water. Our mill races quite dry for weeks past, and yet, thank God, we are blest with health. The statement, will include all the lower part of this country from Upper Marlborough down; above that, it is said, they are more fortunate, having had partial rains.

It is also said, the counties adjoining, Charles, St. Mary's and Calvert, suffer from drought as much, if not more, than we do.

I may truly say, our prospect of a crop is much worse than it was several years since. The cold summer, was believed to be worse than any in the memory of our oldest inhabitants, yet our corn kept green and promised something. Many now have scarcely a hope of making any. Some of my neighbours were so fortunate as to complete the planting of their tobacco crops—and it was thought three weeks ago, that prospects were good, but now they are gloomy in the extreme—we have no garden vegetables and our crops of hay are short. The account given you is not exaggerated. Indeed I feel fully impressed, that if you could at this time take a view of the district of country mentioned, you would say, the appearances for a next year's support are more deplorable than the statement now given.

Prince George's County, Aug. 12. 1819.

Dear Sir—I had prepared some parcels of *Chile Wheat*, the produce of that which you sent me last fall, to be forwarded to you to day. but the gentleman who was to carry them has disappointed me; they shall be sent as soon as I can get an opportunity.

We are suffering here from the severest drought ever known in this part of the country. There has not been a rain to wet the roots of the Corn or Tobacco, since Whitsuntide. There cannot possibly be as much Corn made in our part of the country, as will last the winter out. The Tobacco crop has *almost entirely failed*. Calvert, Charles, and St. Mary's, are as badly off as we are.

CHOLERA MORBUS.

TO THE EDITOR OF THE AMERICAN FARMER.

Sir—No disorder, perhaps, at this season of the year, is more fatal, especially among children than that which is called *Cholera Morbus*; and for a simple and infallible remedy, we cannot feel too grateful. I was awakened very early on Monday morning last, by one of my children, a girl, aged five years, being suddenly and violently seized with this complaint—vomiting and purging at short intervals, until day light. I had noticed the annexed prescription in some of our papers, and as early as I could, procured and burned, as directed, a new, soft cork. Having no milk handy, after rubbing the cork to a powder, I mixed the whole quantity with some molasses and water, strained it and administered to the child about one third of it, which instantaneously and effectually relieved her. She ceased to vomit, played about as usual, though somewhat languidly, and had no evacuation until Wednesday morning, which was healthy, and the child is now in perfect health. From its great apparent astringency I had prepared to dose the child with oil; but on Wednesday morning, the little alarm this circumstance excited, being dissipated, I saw no immediate necessity for administering it. I think you will do a service to the community, by republishing the following article in your useful paper. A Parent.

A writer under the signature of *Medicus*, in the *New York Daily Advertiser*, offers the following as a certain cure for the Cholera Morbus.

Take a cork and burn it *thoroughly* in the fire; when it ceases to blaze, mix it upon a plate with a little milk and water, or any thing more agreeable to the palate, and repeat the dose till the disorder ceases—which it commonly does on the second or third administration of the remedy, the acidity of the stomach is immediately corrected, and the effect is instantaneous.

Receipt for destroying the Fly in Turnips.

Get some waste Tobacco from a Tobacconist, and dry it in the sun, or in a pan over the fire: afterwards pound it into dust, and sow it over the land where your turnips are sowed, and it will preserve them from the *Fly*.

New York, Aug. 18.

By the Hector, Gillender, which sailed from Liverpool on the 26th June, we have received London papers to the 23d, and Liverpool to the 25th of that month.

The citizens of Liverpool were gratified, and astonished by the arrival, at that port, on the 21st of June, of the beautiful steam ship Savannah, Capt. Rogers, in 26 days from Savannah, and 21 from land to land. She was five days in the channel before she got up to Liverpool, and worked her engine eighteen days of the passage. She is the first ship on this construction that has undertaken a voyage across the Atlantic; she was built in this city, and is 319 tons.

Sudden Death.—Died lately on the plantation of Mr. B—— s, in South Carolina, a negro wench, (a field hand,) while in the act of hoeing a hill of corn, aged 45.—Her friends, who attended to lay her out, found lashed round her *the handle of a frying pan*, which she had substituted *in lieu of a corset*, well secured by pieces of rope, which was, no doubt, the cause of her untimely exit.

W. H. D'C. Wright, who has established himself on *Bowly's Wharf*, for the sale of Country Produce on commission, has engaged to furnish the Editor with an account of actual sales of Country Produce on several days in each week. Thus the farmer may rely on the accuracy of our list of prices, with as much confidence as if he had himself made the sales.

To the gentlemen from whom we have hitherto obtained this information, and in whom every confidence was to be placed, we return our sincere thanks—but, not having leisure to make a weekly tour of the wharves, we have taken this method of procuring exact intelligence, particularly as to sales of Corn—Wheat—Rye—Oats and Tobacco.

Sales of Country Produce, ascertained by actual sales, and reported for the American Farmer, by W. H. De Wright—Commission Merchant, Baltimore.

Tobacco—Eight hhds. crop, from Benedict—C. S. Smith's, sold by Dare and Chesley, at 10 and $12—Virginia Tobacco, 6 1-2 to $8—Sales of common Richmond Tobacco, by M'Donald and Sons, at $6 50—Wheat white, 1 06 to $1 10—Sales on Wednesday, at $1 08—Red, 1 02 to $1 07; Sales Saturday, at 1 01 to $1 03—Yesterday, $1 06—Corn, 52 to 57—Oats, 40 to 45—Rye, 50 to 53—North Carolina Staples as per last report.

Live Stock.—Mr. Rusk purchased during the last week, 15 fatted cattle, picked from a drove of 25, for which he paid $8 50 per cwt. (for the neat Butcher's meat—let this hereafter be understood;) They were brought from the South Branch of Potomac, fatted by Wm. Cunningham, and of superior quality.

Fish.—Shad, No. 1, $7—No. 2, $6 50—Herrings, No. 1, $2 75, wholesale and retail, $3; No. 2, wholesale, $2 25—Retail, $2 50—Hay and Straw as last reported.